AMENDMENTS TO CLAIMS

This listing of claims will replace all prior versions and listings of claims in the subject patent application.

Listing of Claims:

Claim 1 (currently amended). A composition of matter represented by the general formula

$$Ln_xLn'_{x'}A_yTi_zCe_{1-x-x'-y-z}O_{2-\delta}$$

wherein Ln is selected from the group consisting of Sm~~, Gd and Y~~;

Ln' is selected from the group consisting of La, Pr, Nd, Pm, Eu, Tb, Dy, Ho, Er, Tm, Yb and Lu; A is selected from the group consisting of Mg, Ca, Sr and Ba,

$0.05 \leq x \leq 0.25$, $0 \leq x' \leq 0.25$, $0 \leq y \leq 0.03$, $0.001 \leq z \leq 0.03$, $0.05 \leq x + x' \leq 0.25$

$0.001 \leq y + z \leq 0.03$, wherein δ is a number which renders the composition of matter charge neutral.

Claim 2 (canceled). The composition of matter of claim 1 wherein Ln is Sm.

Claim 3 (original). The composition of matter of claim 1 wherein A is Mg.

Claim 4 (original). The composition of matter of claim 1 wherein $0.1 \leq x \leq 0.2$.

Claim 5 (original). The composition of matter of claim 1 wherein $y = 0$.

Claim 6 (original). The composition of matter of claim 1 wherein $x' = 0$.

Claim 7 (currently amended). A composition of matter represented by the general formula $Ln_xTi_zCe_{1-x-z}O_{2-\delta}$ wherein Ln is selected from the group consisting of Sm[, Gd and Y], $0.05 \leq x \leq 0.25$, $0.0025 \leq z \leq 0.02$ and δ is a number which renders the composition of matter charge neutral.

Claim 8 (canceled). The composition of matter of claim 7 wherein Ln is Sm.

Claim 9 (canceled). The composition of matter of claim 7 wherein Ln is Gd.

Claim 10 (canceled). The composition of matter of claim 7 wherein Ln is Y.

Claim 11 (canceled). A method of manufacturing a solid electrolyte comprising a composition of matter having a density greater than 95% theoretical density represented by the general formula

$$Ln_xLn'_{x'}A_yTi_zCe_{1-x-x'-y-z}O_{2-\delta}$$

wherein Ln is selected from the group consisting of Sm, Gd, Y, and mixtures thereof;
Ln' is selected from the group consisting of La, Pr, Nd, Pm, Eu, Tb, Dy, Ho, Er, Tm, Yb and Lu; A is selected from the group consisting of Mg, Ca, Sr and Ba, $0.05 \leq x \leq 0.25$, $0 \leq x' \leq 0.25$, $0 \leq y \leq 0.03$, $0.001 \leq z \leq 0.03$, $0.05 \leq x + x' \leq 0.25$, $0.001 \leq y + z \leq 0.03$, wherein δ is a number which renders the composition of matter charge neutral, said method comprising the steps of.

(a) forming a mixture by mixing metal-containing materials corresponding to the metals in the composition of matter to establish the stoichiometric coefficients of the metals of the composition of matter;

(b) forming the mixture into a desired shape for the solid electrolyte; and

(c) sintering the desired shape at a temperature of less than or equal to1600 °C to form the solid electrolyte having a density greater than 95% theoretical density.

Claim 12 (canceled). The method of claim 11 wherein the metal-containing materials are metallic oxides.

Claim 13 (canceled). The method of claim 12 wherein the metallic oxides have an average particle size of less than 5 μm.

Claim 14 (canceled). The method of claim 11 wherein mixing is effected by a technique selected from the group consisting of attrition milling, vibratory milling, ball milling and high shear mixing.

AMENDMENTS TO THE SPECIFICATION

Kindly amend the Abstract of the Disclosure as follows:

The present invention relates to compositions of matter represented by the general formula

$$Ln_xLn'_{x'}A_yTi_zCe_{1-x-x'-y-z}O_{2-\delta}$$

wherein Ln is selected from the group consisting of Sm, Gd, Y~~, and mixtures thereof~~; Ln' is selected from the group consisting of La, Pr, Nd, Pm, Eu, Tb, Dy, Ho, Er, Tm, Yb, Lu~~;~~;
A is selected from the group consisting of Mg, Ca, Sr and Ba, $0.05 \leq x \leq 0.25$,
$0 \leq x' \leq 0.25$, $0 \leq y \leq 0.03$, $0.001 \leq z \leq 0.03$, $0.05 \leq x + x' \leq 0.25$, $0.001 \leq y + z \leq 0.03$, wherein δ is a number which renders the composition of matter charge neutral. The compositions can be formed into sintered bodies suitable for use as solid electrolytes in devices including solid-state oxygen generators. Such sintered bodies have greater than 95% theoretical density at temperatures at or below 1600°C, and can be produced by a solid-state method.

Kindly amend Paragraph [0012] commencing on page 4, line 15 of the Specification to read as follows:

[0012] These objects are solved and other deficiencies of the prior art are overcome by a composition of matter represented by the general formula:

$$Ln_xLn'_{x'}A_yTi_zCe_{1-x-x'-y-z}O_{2-\delta}$$

wherein Ln is selected from the group consisting of Sm, Gd, Y~~, and mixtures thereof~~; Ln' is selected from the group consisting of La, Pr, Nd, Pm, Eu, Tb, Dy, Ho, Er, Tm, Yb and Lu~~;~~ A is selected from

the group consisting of Mg, Ca, Sr and Ba, and $0.05 \leq x \leq 0.25$, $0 \leq x' \leq 0.25$, $0 \leq y \leq 0.03$, $0.001 \leq z \leq 0.03$, $0.05 \leq x + x' \leq 0.25$ and $0.001 \leq y + z \leq 0.03$, and wherein δ is a number which renders the composition of matter charge neutral.

Kindly amend Paragraph [0026] commencing on page 7, line 19 of the Specification to read as follows:

[0026] The present invention relates to a composition of matter represented by the general formula:

$$Ln_xLn'_{x'}A_yTi_zCe_{1-x-x'-y-z}O_{2-\delta}$$

wherein Ln is selected from the group consisting of Sm, Gd, Y~~, and mixtures thereof~~; Ln' is selected from the group consisting of La, Pr, Nd, Pm, Eu, Tb, Dy, Ho, Er, Tm, Yb and Lu; A is selected from the group consisting of Mg, Ca, Sr and Ba, and $0.05 \leq x \leq 0.25$, $0 \leq x' \leq 0.25$, $0 \leq y \leq 0.03$, $0.001 \leq z \leq 0.03$, $0.05 \leq x + x' \leq 0.25$ and $0.001 \leq y + z \leq 0.03$, and wherein δ is a number which renders the composition of matter charge neutral.